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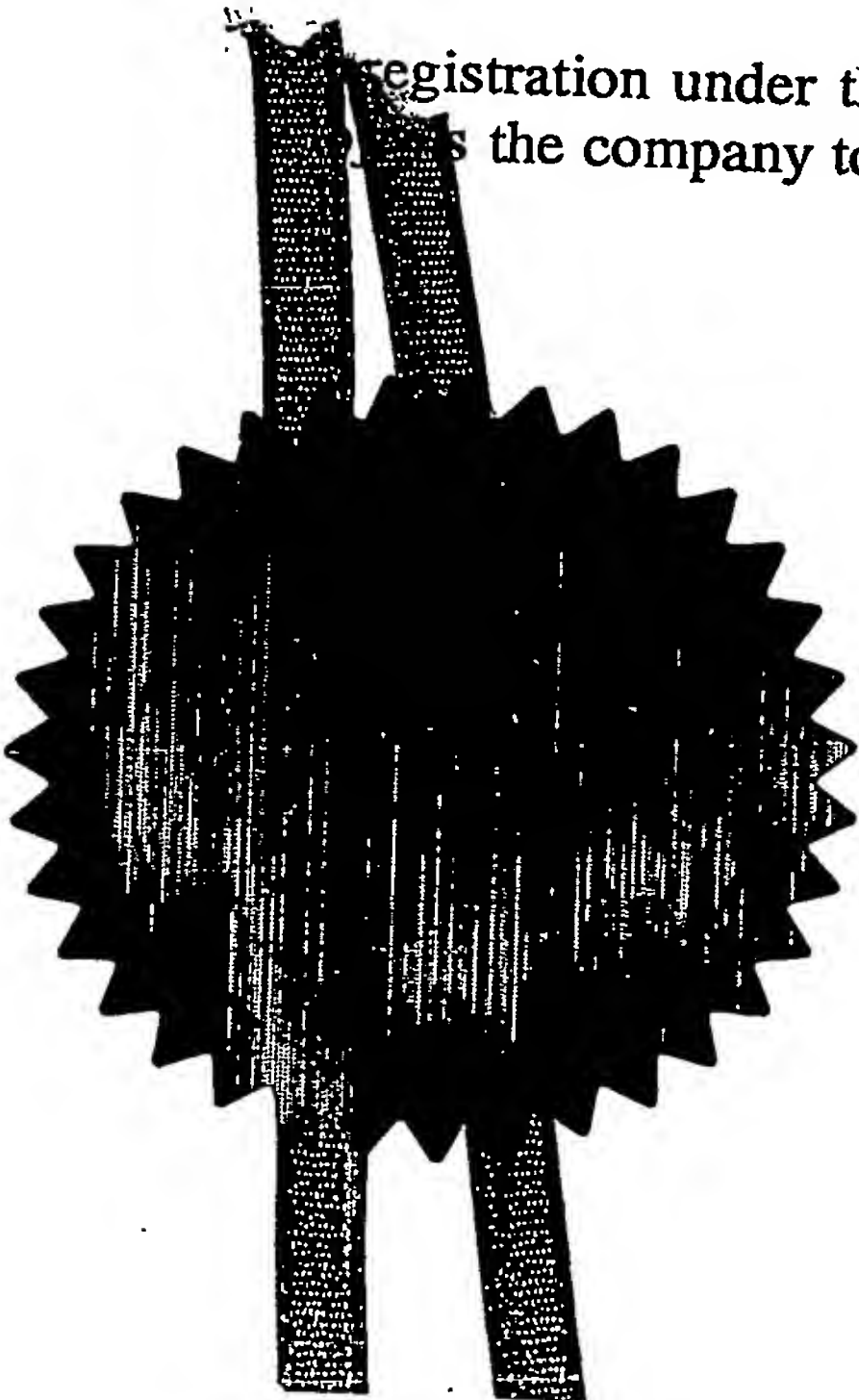
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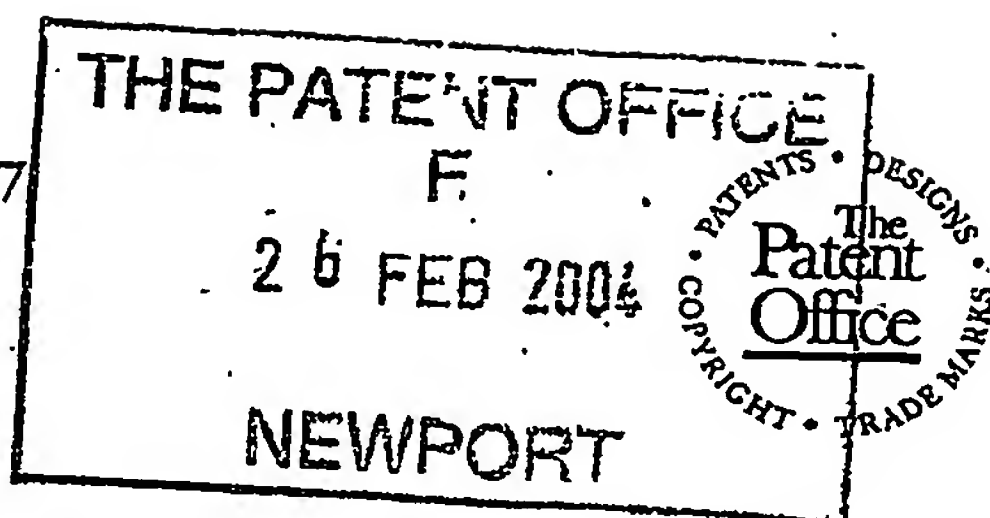
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1. Your reference

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2. Patent application number

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0404219.8

26 FEB 2004

3. Full name, address and postcode of the or of each applicant (underline all surnames)

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NORTHERN IRELAND

8659575001

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

A COLLAPSIBLE BOX OR COFFIN

5. Name of your agent (if you have one)

ALAN WALLACE

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

4 MOUNT CHARLES

BELFAST

BT7 1NZ

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6713259002

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Alan Wallace

Date 24/2/04

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ALAN WALLACE 02890 236000

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A Collapsible Box or Coffin

The present invention relates to a collapsible box and especially to a collapsible coffin.

5

Conventional coffins are generally rigid, heavy objects which are awkward and cumbersome to transport from one location to another. Such coffins are therefore not particularly suitable for transporting dead bodies from
10 accident locations. Emergency services tend to rely on body bags for the removal and transportation of dead bodies from such locations. Conventional body bags, however, provide very little or no support to the body contained therein.

15

It is therefore an object of the present invention to provide an easily (dis)assembled collapsible coffin which mitigates the disadvantages of the prior art.

20 Accordingly, a first aspect of the present invention provides a collapsible box or coffin comprising first and second opposed end members joined together by first and second extendible, or collapsible, side walls; the coffin being movable between a first, storage state,
25 wherein the side walls are in a first, compressed state; and a second, in-use state, wherein the side walls are in a second, extended state.

Preferably, each of the side walls comprises a
30 plurality of batons connected together by respective

couplings so as to form a Z-shaped arrangement of batons.

5 Preferably, each of the side walls comprises a Z-shaped arrangement engageable with a further adjacent Z-shaped arrangement thereby forming a lattice.

10 Further preferably, the batons are capable of movement about the couplings such that the lattice is capable of concertina-like movement between the first and second states.

15 Preferably, the coffin also comprises a base portion disposed between the side walls and the end members.

20 Preferably, the base portion comprises a series of elongate rods, each of which rods is disposed between the side walls and located substantially parallel to the end members.

Preferably, the lattice includes a plurality of peaks and troughs formed from the batons.

25 Further preferably, a plurality of connecting arms is provided between respective adjacent peaks and/or troughs of the lattice.

30 Preferably, the coffin is substantially cuboid in its in-use state.

From a second aspect the invention provides a box or coffin having a base portion comprising a plurality of panels, each panel being connected to each adjacent panel by a respective flexible joint such that each
5 base panel is foldable onto an adjacent base panel; and a plurality of side panels connected to a base panel by a respective flexible joint such that each side panel is foldable onto a base panel.

10 Preferably, each base panel has a respective side panel foldably connected to a respective one of two opposing sides thereof. Preferably, each side panel is connected to each adjacent side panel by a respective flexible joint.

15

In the preferred embodiment, the joints between adjacent side panels are substantially in register with a respective joint between adjacent base panels; the joints between the side panels and the base panels
20 being substantially in register with one another and substantially perpendicular with the joints between adjacent base panels.

25 Preferably, the base panels and side panels are substantially rectangular in shape.

30 Preferably, the base has a respective, and preferably rectangular, end panel connected to a respective one of two opposing ends thereof by a respective flexible joint.

The flexible joints may take any suitable form, e.g. one or more pieces of fabric or webbing (textile or synthetic) formed from, for example, nylon or the like. In such embodiments the panels may be formed from any
5 suitable material such as plastics, wood, cardboard or even metal. In some embodiments, the side panels and base panels may be included in a continuous blank of material, e.g. plastics, in which fold lines, e.g. grooves, are formed to provide the flexible joints.

10 The preferred arrangement is such that the base panels are foldable onto one another in a concertina-like manner.

15 Embodiments of the invention will now be described with reference to the accompanying drawings in which:-

Figure 1 is a perspective view of a collapsible coffin according to a preferred embodiment of the present
20 invention, in an in-use, extended state;

Figure 2 is a perspective view of the coffin of Figure 1 in a collapsed state, for storage;

25 Figure 3 is a perspective view of the coffin showing a plurality of connecting arms adapted to provide support to the side walls of the coffin in its in-use, extended state;

30 Figure 3A is an enlarged view of one of the arms of Figure 3;

Figure 4 is a plan view of an alternative embodiment of a coffin embodying the invention shown in an unfolded and unassembled state;

5

Figure 5 is a perspective view of the coffin of Figure 4 in an assembled, or use, state; and

10 Figures 5A and 5B show details of the coffin of Figure 4.

Referring now to the accompanying drawings, there is illustrated a collapsible coffin 10 according to a preferred embodiment of the present invention. The
15 coffin 10 preferably comprises first and second opposed end members 12, joined together by first and second extendible side walls 14. The coffin 10 also preferably comprises a base portion 16 located between the side walls 14 and the end members 12. The coffin 10 is
20 movable between a first, storage state, wherein the side walls 14 are in a first, compressed state, and a second, in-use state, wherein the side walls 14 are in a second, extended state, and the coffin 10 is substantially cuboid.

25

Referring now to Figure 1, the side walls 14 are shown to comprise a plurality of batons 18 connected together by respective couplings 20 so as to form a Z-shaped arrangement of batons. Each of the side walls 14
30 preferably comprises a first Z-shaped arrangement engageable with a second adjacent Z-shaped arrangement

thereby forming a lattice. Preferably, the first Z-shaped arrangement abuts and substantially overlaps the second Z-shaped arrangement, as shown in Figure 1. The lattice includes a plurality of peaks 24 and troughs 26
5 formed by adjacent batons 18. Each of the batons 18 is preferably connected at each end to a respective adjacent baton 18, such that the batons 18 are hinged together by the couplings 20 located at the peaks 24 and troughs 26 of the lattice (and thereby forming the
10 Z-shaped arrangements).

The batons 18 are capable of movement about the couplings 20 such that the lattice is capable of concertina-like movement between the first and second
15 states. Although not shown in Figure 1, it will be apparent that the lattice may include further connecting means (not shown) to connect the first and second adjacent Z-shaped arrangements where the batons 18 of said first and second Z-shaped arrangements
20 overlap, thus providing an alternative hinging arrangement of the lattice. In this manner, the couplings 20 (and optionally, further connecting means) enable the lattice to move between a collapsed state, for storage, and an in-use state.

25 The base portion 16 (shown in dotted lines in Figure 1) preferably comprises a plurality of rods 22, each of which rods 22 extends between opposed troughs 26 of the side walls 14, and located substantially parallel to
30 the end members 12. It will be appreciated that the base portion 16 may alternatively comprise a lattice

(not shown) extending between the two end members 12 and side walls 14. In this manner, the base portion lattice would be moveable between a first, compressed state and a second, extended state in the same way the
5 lattices of the side walls 14 are moveable.

Referring now to Figures 3 and 3A, the coffin 10 may additionally comprise a plurality of connecting arms 28 preferably provided on the batons 18, such that when
10 the coffin 10 is in its in-use state, the arms 28 may be used to connect adjacent peaks 24 and/or adjacent troughs 26. The connecting arms 28 are preferably in the form of detachable latches or hooks as shown in Figure 3a, although it will be appreciated that any
15 alternative form of connecting arms 28 may be used. The connecting arms 28 conveniently provide additional support and rigidity to the side walls 14 in their in-use, extended state. Although the base portion 16 is not shown in Figure 3, it will be appreciated that the
20 base portion 16 may be present.

It will be appreciated that a substantially cuboid cover (not shown) is preferably provided over the coffin 10. The cover is shaped and dimensioned so that
25 it fits tightly over the coffin 10 when the coffin 10 is in its extended state. The cover may be provided with one or more zips to provide easy access to the coffin 10, such that a portion of the cover may serve as a coffin lid (not shown). When the coffin 10 is in
30 its first, compressed state, the cover will generally be folded and packed around the coffin 10 for storage.

The cover may be made from any suitable material, such as a waterproof cloth or plastic. The cover may be of a material that can resist attack from chemicals in gas or liquid form and contain such gases or liquids. The cover may be sealed tightly, using any suitable means, such that the body and any gases or liquids associated with the body or its surroundings are also safely retained therein.

10 A bag (not shown) may also be provided which is suitable to receive a body (not shown) within the coffin 10. The bag is preferably shaped and dimensioned to suit the internal dimensions of the coffin 10 in its extended state. The bag preferably comprises a
15 transparent waterproof material, such as plastic or the like. The bag may be sealed tightly using any suitable means, such that the body and any gases or liquids associated with the body or its surroundings are also safely retained therein. The bag is generally kept
20 within the coffin 10 until it is required.

When in the compressed state, the whole apparatus, including the bag and coffin 10 housed within the cover, is preferably of a suitable size for storing
25 within a suitcase or the like. When the coffin 10 is required, for example at an accident location, the coffin 10 is moved into its in-use state by extending the lattices forming the first and second side walls 14 (and optionally the base portion 16) as previously
30 described herein. If present, the connecting arms 28 are used to connect adjacent peaks 24 and troughs 26;

as shown in Figure 3, to provide more rigidity to the extended coffin 10.

One or more zips of the cover is then at least
5 partially unzipped, to enable the bag to be removed from the coffin 10. Once a body has been placed in the bag, the bag is sealed and returned to the coffin 10. The cover is then generally re-zipped. The cover may be provided with handles (not shown) so that the coffin 10
10 may be conveniently carried. The present invention therefore provides a convenient and relatively lightweight coffin 10 for the removal of bodies from the scene of an accident. The coffin 10 also provides sufficient support to the body being transported.

15 It will be appreciated that the invention is not limited to the embodiment described herein. For example, the side walls 14 may alternatively comprise a plurality of telescopic rods, hinged rods, foldable
20 rods (not shown) or the like, joining the two end members 12. Thus, by extending and compressing the rods, the coffin 10 would be moveable between the states previously described herein. Furthermore, the base portion 16 may also alternatively comprise a
25 plurality of telescopic rods (not shown) or the like. When the coffin 10 is extended into its in-use state, these telescopic rods could be extended to connect pairs of opposed troughs 26; so as to form the base portion 16. It will be appreciated that although the
30 base portion 16 is preferably an integral part of the coffin 10, the base portion 16 is not actually required

to be present. For example, the bag may be adapted so that it is in the form of a liner releasably attached to the side walls 14 thus forming a sheet upon which a body may be placed.

5

It will be apparent that the side walls 14, and, optionally, the base portion 16 (when in the form of a lattice), may be constructed to "click" and thereby lock in position when extended into the in-use state, by any conventional means. The side walls 14 may then be unlocked to return the coffin 10 to its compressed state for storage. It will be further apparent that the coffin 10 may also include a lid (not shown) which may, for example, be hinged to one of the side walls 14.

15

It will also be appreciated that although the coffin 10 is preferably used as an emergency coffin 10, it may be adapted in size or shape to suit any other particular need. In particular, if desired, the coffin 10 may be used on its side so that a body could be placed on one of the end members 12. It will be further appreciated that the coffin 10 is not limited to carrying bodies, and that it may be used to carry any other object or substance.

20
25

Due to its rigid nature and waterproof cover it may be used to house a homeless person, for protection against the elements.

30 Figure 4 shows an alternative embodiment of a box or coffin generally indicated as 110 in plan view and in

an unfolded and unassembled state. The coffin 11 has a base portion 112 which is preferably generally rectangular and comprises a plurality of panels 114, each panel 114 being connected to each adjacent panel 114 by a respective flexible joint 116 such that each base panel 114 is foldable onto an adjacent base panel 114. The coffin 110 further includes a plurality of side panels 118 each connected to a base panel 114 by a respective flexible joint 117 such that each side panel 118 is foldable onto a base panel 114.

In the illustrated embodiment, each base panel 114 has a respective side panel 118 foldably connected to a respective one of two opposing sides thereof. It is also preferred that each side panel 118 is connected to each adjacent side panel 118 by a respective flexible joint 119.

In the preferred embodiment, the joints 119 between adjacent side panels 118 are substantially in register with a respective joint 116 between adjacent base panels 114. The joints 117 between the side panels 118 and the base panels 114 are substantially in register with one another and substantially perpendicular with the joints 116 between adjacent base panels 114.

The base panels 114 and side panels 118 are preferably substantially rectangular in shape. Hence, when laid out as shown in Figure 4, the base panels 114 and side panels 118 together form a generally rectangular blank, the joints 116, 117, 119 being arranged in a lattice

fashion with the joints 116, 119 being substantially perpendicular with the joints 117.

Preferably, the base 112 has a respective, and
5 preferably rectangular, end panel 120 connected to a respective one of two opposing ends 122, 123 thereof by a respective flexible joint 126.

The flexible joints 116, 117, 119, 126 may take any
10 suitable form, e.g. one or more pieces of fabric or webbing (textile or synthetic) formed from, for example, nylon or the like. In such embodiments the panels 114, 118, 120 may be formed from any suitable material such as plastics, wood, cardboard or even
15 metal. In some embodiments, the side panels 118 and base panels 114 may be included in, or formed from, a continuous blank of material, e.g. plastics, in which fold lines, e.g. grooves, are formed, e.g. by routing, to provide the flexible joints. Each foldable
20 continuous blank (which forms part of the respective side walls and base) may be connected to adjacent foldable continuous blanks by respective flexible joints. Each foldable continuous blank may have creases or folds which differentiate between those
25 portions of side wall, base and opposite side wall, and hence allows the first side wall panels to fold on top of the base panels and the opposite side wall panels to subsequently fold on top of the first side wall panels.

30 In the preferred embodiment, when the coffin 110 adopts an assembled, or use, state, (as shown in Figure 5) the

side panels 118 located at one side of the base 112 together provide a first side wall and the panels 118 located at the opposite side of the base 112 provide a second side wall. The side walls are folded at the
5 respective joints 117. (which together are substantially collinear and may serve as a single joint) such that each sidewall is substantially perpendicular with the base 112. The end panels 120 are folded at their
10 respective joints 126 such that each end panel 120 is substantially perpendicular with the base 112. The arrangement is such that the end panels 120 are substantially perpendicular with the side walls and that accordingly, the coffin 110 is generally cuboidal in shape. Preferably, the base panels 114 are
15 substantially equal in size as are the side panels 118.

A lid 130 may be provided which, preferably, comprises a plurality of lid panels 132, each adjacent lid panel being connected by a flexible joint 134. The lid 130
20 may or may not be dimensioned to fully cover the mouth of the coffin 110. Alternatively the lid may comprise a blank, which incorporates creases or folds which allows it to be folded in a concertina manner.

25 Referring now to Figure 5A, it is preferred that the end panels 120 each carry one or more clips 140 for engagement with the respective adjacent side panels 118 when in the assembled state. Each clip 140 is fixed to the respective end panel 120, projects laterally
30 therefrom and is shaped to define a seat for receiving the adjacent side panel 18 and for holding same in.

close proximity with the end panel 120. The end panels, when positioned in the in-use state, sit inside the respective side panels, preventing the side walls from collapsing inwardly into the box/coffin, when in
5 the in-use state. Furthermore the clips attached to the end panels prevent the side walls from moving outwardly.

The lid may be dimensioned so that it fits between the
10 side walls, preventing the side walls from collapsing inwardly into the box/coffin, when in the in-use state. The clips, which are attached to the lid during use, hang over the top edge of the side walls and prevent the side walls from moving outwardly.

15

As can be seen from Figure 5B, similar clips 142 may be provided on the lid 130 for clipping, or holding, the side panels 118 in close proximity with the lid 130.

20 A closable, e.g. zippable, cover or bag (not shown) is preferably provided into which the coffin 110 may be placed. Preferably, the cover or bag is of similar shape and dimension as the coffin 110 when in the assembled state.

25

The coffin 110 may readily be folded into a storage state. To this end, the lid 130 is removed and the side panels 118 are released from the clips 140, 142. This allows the coffin 110 to adopt the unfolded state
30 shown in Figure 4. The side walls (i.e. the side panels 118) may each be folded onto the base 112 via

joints 117. Conveniently the base is wider than the height of the side panels 118 so that the side panels 118 do not overlap the base 112 when so folded.

Moreover, the width of the side panels 18 is preferred to substantially match the width of the adjacent base panel 114 so that, when folded thereon, the side panels 118 lie fully within the bounds of the base panel 114.

The preferred arrangement is such that the base panels 114 are foldable onto one another in a concertina-like manner, including when the side panels 118 are folded thereon. Hence the base 112 and side walls may be folded into a state in which the overall size of the coffin 110 is determined in two dimensions by the size of the base panels 112 (or the largest of the base panels if they are not of equal size). The end panels 120, which are preferably substantially equal in size to the base panels 114, may also be folded onto the outermost base panels 114.

The present invention is not limited to the embodiment described herein which may be amended or modified without departing from the scope of the present invention.

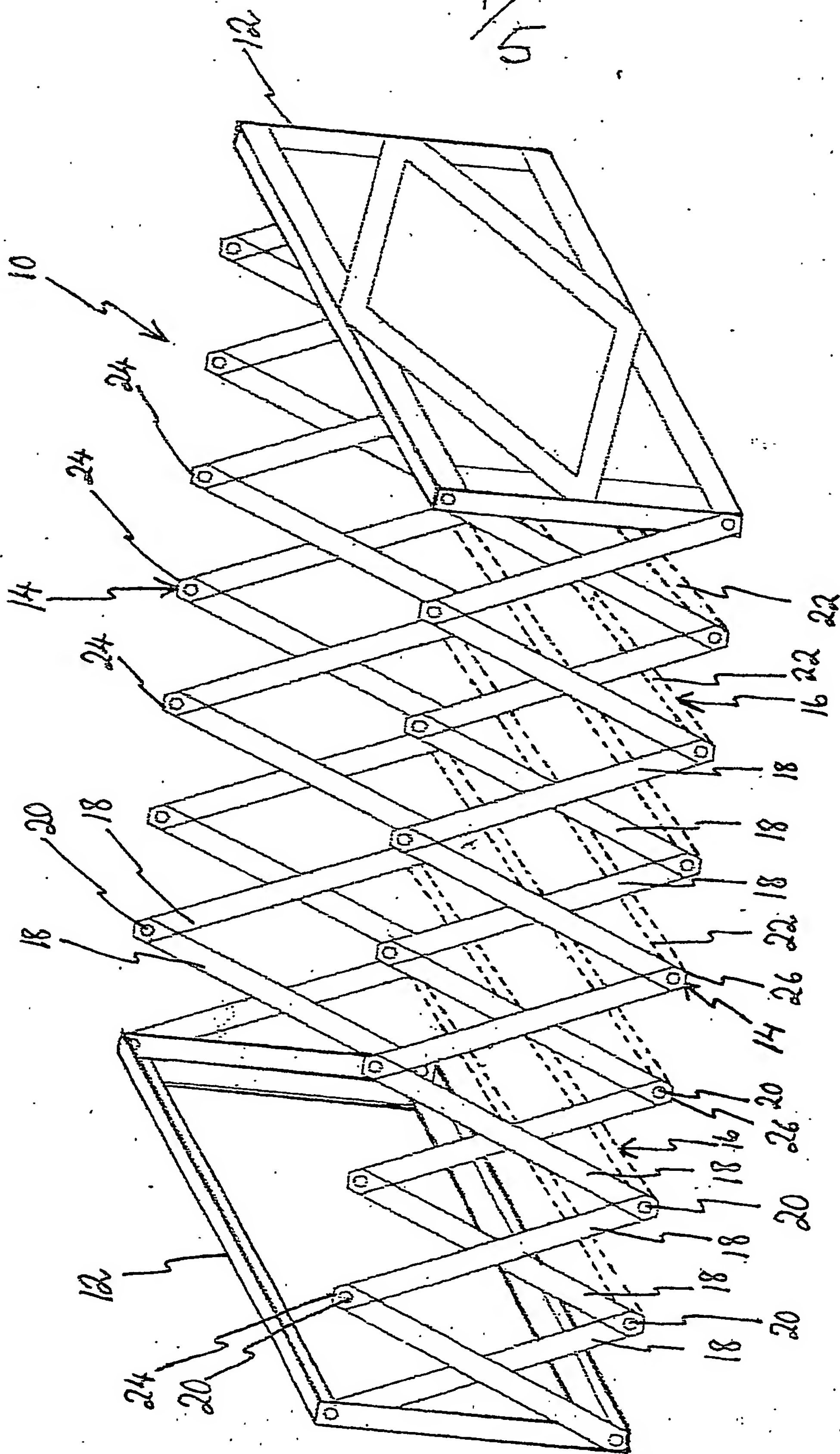


FIGURE 1

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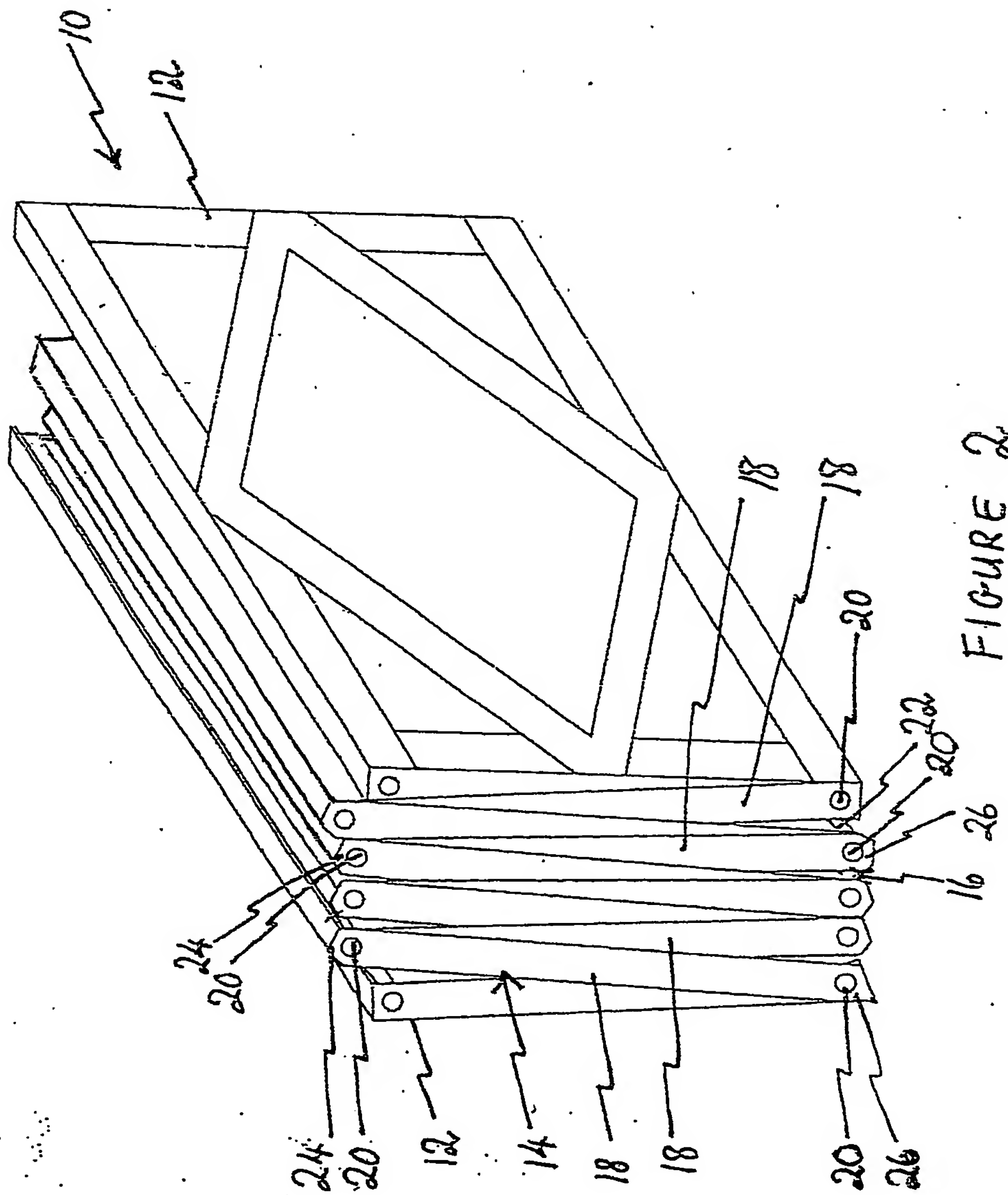


FIGURE 2

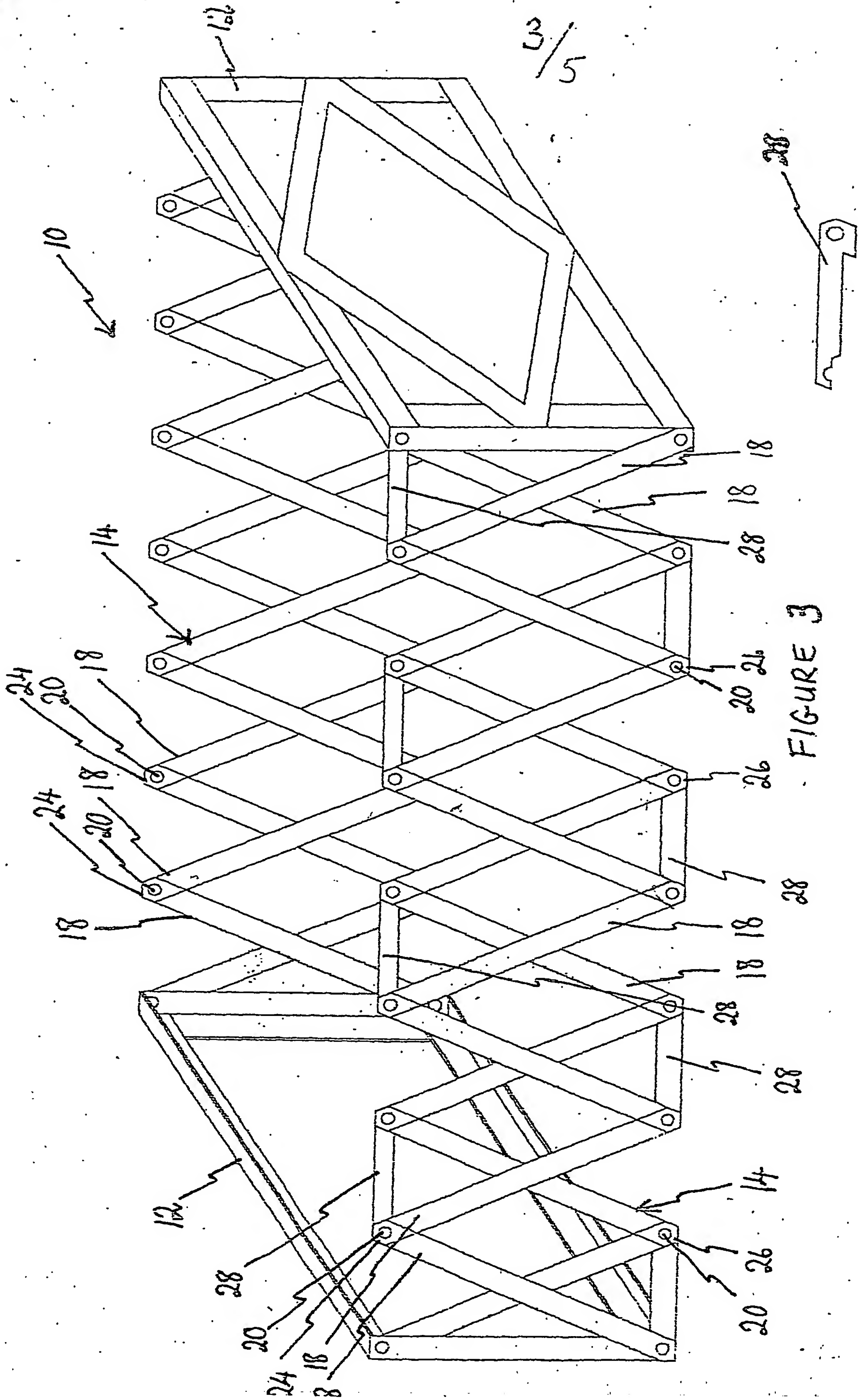


FIGURE 3

FIGURE 3A

110

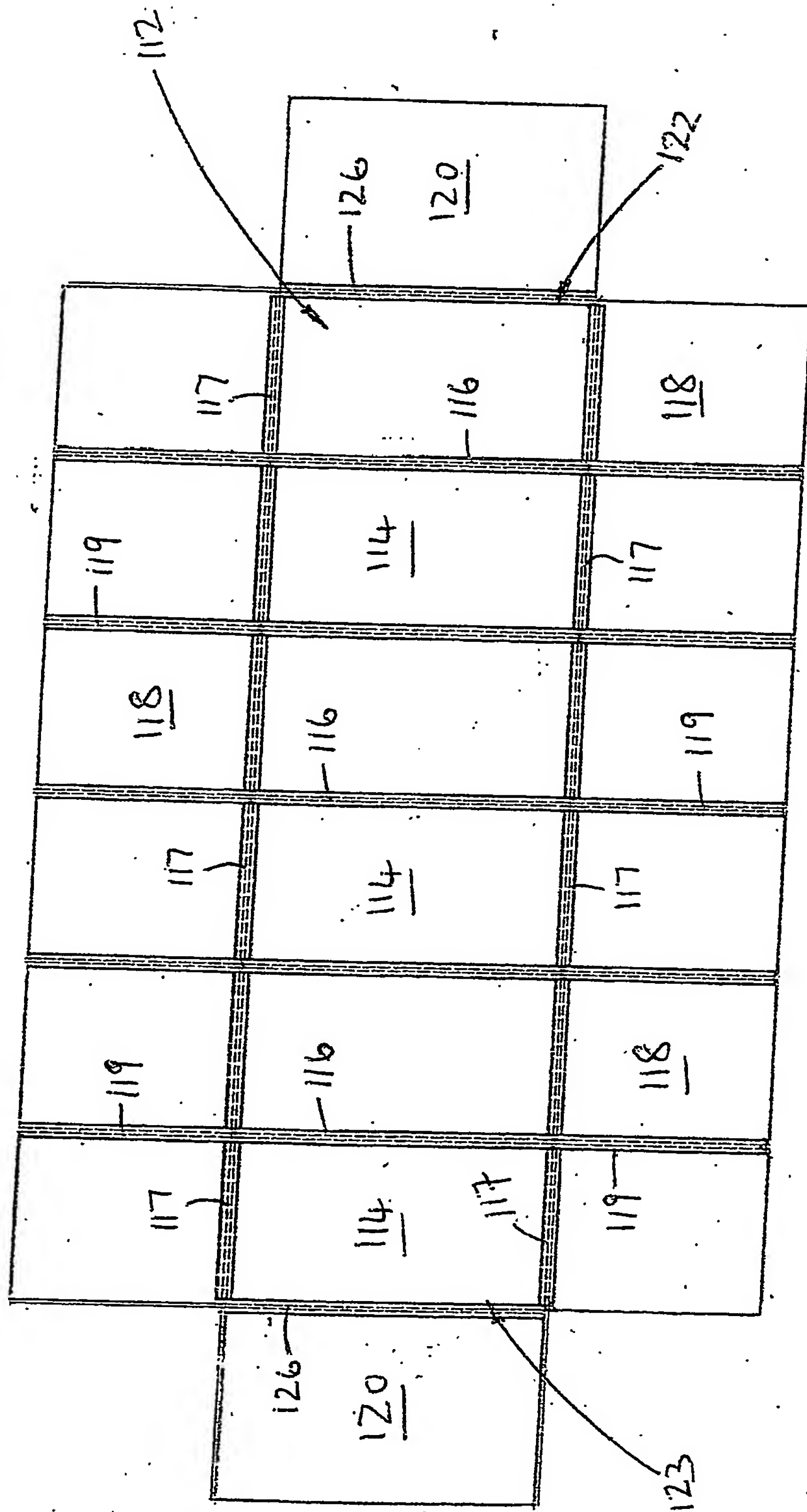


FIG. 4

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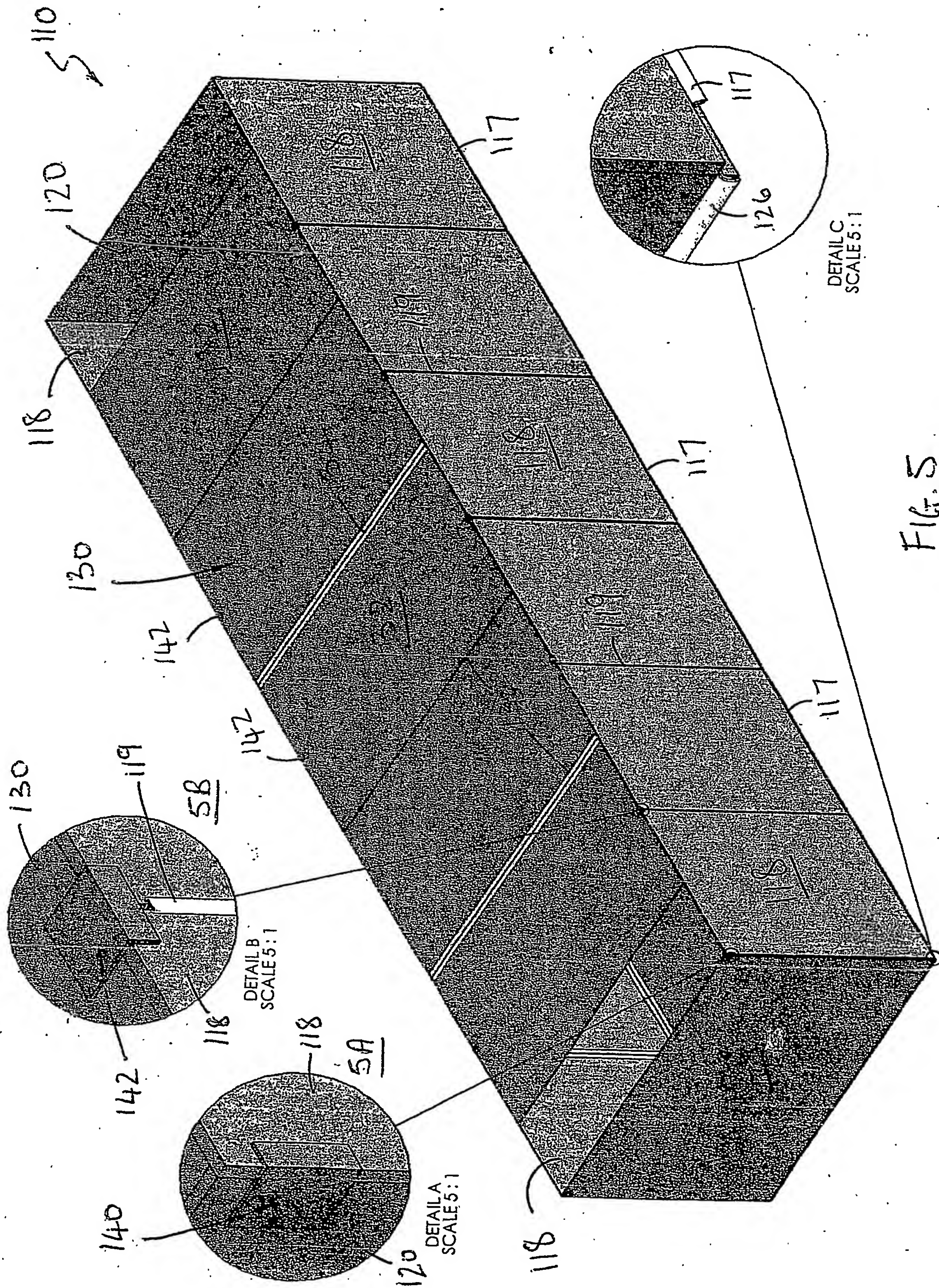
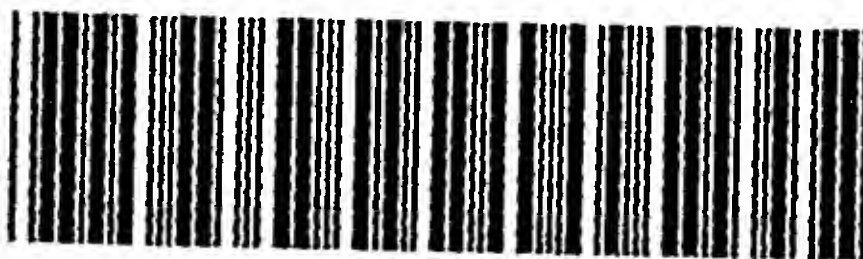


Fig. 5

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